histology and physiology of muscle generally Rollett wrote in Eulenburg's "Encyclopædie." To physiological optics he contributed several papers on spatial perception, on contrast, on the effect of plane parallel glass plates, and various other subjects. He was also one of the first discoverers of sense organs in tendons, and published various observations on the sense of taste, of smell, and on cutaneous sensations.

That Rollett was no less of a teacher than of an observer is proved by the success of many of his pupils. The University of Graz acknowledged his merit by choosing him for rector no less than four different years, including the year of inauguration of the new buildings, when the Emperor and other illustrious guests were to be received. Rollett was also frequently elected as a representative on the local board, and the organisation of the new physiological institute, built under his supervision, testifies to his practical ability.

Most scientific men are naturally diffident to commit themselves in writing to a verdict on the merit of a fellow worker, but it is a curious fact that in verbal conversation this diffidence does not appear. The mere way in which the name of an observer is mentioned is often equivalent to a fairly strong expression of opinion. A careful and conscientious observer commands a degree of admiration and reverence that affects the tone of every chance remark. Judged by this standard, Alexander Rollett was a true follower of science. R. DU BOIS-REYMOND.

NOTES.

A RUMOUR has reached us that at the annual meeting of the Royal Society on Monday next an attempt is to be made by a certain section of the fellows to upset the selection of officers made last week by the council. It appears that the physiologists are under the belief that they have acquired a prescriptive right to hold one of the two secretaryships. It is true that for upwards of forty years they have so held it, but the group of natural sciences includes more than physiology or even biology, and the council, in the exercise of its discretion, has thought that it was high time that one of the other sciences should be represented in this secretaryship. We are further informed that a copy of a letter is being circulated which appears to convey an invitation from the president and council to a certain physiologist to accept the vacant office. That letter was, it is stated, written in error, without the sanction or knowledge of the president and council, but in view of it a special meeting was called to consider the matter, when the council decided to adhere to the decision at which they had already arrived in the ordinary and regular way—a decision which is obviously in the best interests of the Royal Society as a whole, and doubtless the great majority of the fellows will support it by their votes on Monday.

A CORRESPONDENT of the *Times* directs attention to the wise recognition given to science and other branches of learning by Continental nations on all occasions of national importance; and the comparison he makes with our own official customs is not creditable to our dignity. When a monarch or the supreme authority of a State visits the Court of another nation, men of "light and leading" are usually invited as guests to meet him. These are the men who give distinction to a nation; and a people which fosters intellectual accomplishments cannot conceive a State function in which they are not represented. Here, however, there is little pride in the glory which learning brings to a State, and little encouragement is given to the men who devote themselves to the advance of knowledge. Not a single writer, painter, sculptor, architect, musician or man of science of distinguished eminence was invited to Windsor or to the Guildhall to meet the King and Queen of Italy during the recent visit; and the omission, inconceivable to a foreigner, is characteristic of our customs. The *Times* correspondent concludes his letter with the following remark, with which we are entirely in sympathy:—"I believe I shall be expressing the opinion of many of my countrymen if I say that it is much to be regretted that, on great national occasions, persons of titular rank, of great wealth, or of political prominence should be considered adequately representative of the Realm, and that the arts and sciences should be ignored, as though they were non-existent among us."

SINCE the termination of the Bayliss *versus* Coleridge case, which is discussed in another part of this issue, two further communications, which appear to us as striking confirmation of the views expressed in our article, have been received by the daily papers; they are:—(1) a letter from Mr. Coleridge in which he announces that he has paid the damages (which would be interesting, had it been optional) and that he intends to continue on his former courses; (2) a letter from Mr. Bayliss, from which we learn that the large sum which he might, after having personally borne the expense and long months of worry, have used, with perfect justice, for his own advantage, has been devoted by him to the furtherance of that branch of physical science which was the object of the recent attack. Mr. Bayliss's employment of this money as a public trust is in complete consonance with the sense of public duty which has actuated his conduct throughout this matter. It will be endorsed by English physiologists and by the public as forming a worthy and fitting termination to the struggle which has been followed with so widespread an interest.

A REUTER message from Buenos Ayres announces that the Argentine war vessel *Uruguay* has arrived at Rio Gallegos with the members of the Nordenskjöld Antarctic Expedition on board. Two of the missing Swedish explorers were found on Seymour Island on November 8, and others at Snow Hill. The *Uruguay* then proceeded to Paulete Island, where the main body had wintered, and took the remaining members of the expedition on board. Dr. Nordenskjöld's expedition left Falmouth in the steam yacht *Antarctic* in October, 1901, and he expected to be home again early in the present year. From the outset of the voyage the expedition met with countless difficulties owing to the state of the ice. In December, 1902, the vessel reached the north-east coast of Louis Philippe Land, where Dr. Nordenskjöld, Lieutenant Anderson, and two sailors were left at Mount Bransfield. Dr. Nordenskjöld proposed to proceed to Snow Hill in sledges. It was arranged that Mount Bransfield should be the rendezvous for the whole expedition. The *Antarctic* meanwhile made her way to the east of Joinville Island and entered Erebus and Terror Bay. There she was caught in the ice, which finally crushed and sank her. Captain Larsen succeeded in saving all on board, and the party took to three of the ship's boats, which they equipped with provisions. They drifted about for sixteen days, and finally reached Paulete Island, where they established their winter quarters. In September, 1902, Dr. Nordenskjöld, accompanied by Lieutenant Sobral and one sailor, made a sledge journey with two sledges and five dogs in a south-westerly direction. Travelling by way of King Oscar Land, a latitude of 66 degrees was reached, the longitude being 62 degrees west. The party returned to Snow Hill at the beginning

of November, after having made a journey of more than 400 miles, in the course of which new bays and islands were found, and other discoveries were made involving important changes in the existing maps of the region. While awaiting the return of the *Antarctic*, Dr. Nordenskjöld was engaged in geological, magnetic, and meteorological observations, and got together important collections of fossils, plants, and animals. During the first winter the mean temperature was −12° F. below zero, but in August it went down to −42° F.

M. BORDAS, formerly assistant director of the Municipal Laboratory of Paris, has been appointed head of the laboratories of the French Minister of Finance, to succeed M. de Luynes, who is to be styled honorary director.

THE Engineering Standards Committee has appointed Messrs. Crosby Lockwood and Son as official publishers to the committee All the reports and specifications published by the committee may be had from the official publishers or direct from the offices of the committee, 28 Victoria Street, Westminster.

AT the London Institution on Monday Sir John Gunn delivered his presidential address to the members of the Institute of Marine Engineers. The Denny medal was then presented to Mr. C. W. Barnes for his paper on ship electric lighting. The medal was founded by the late Mr. Peter Denny, of the shipbuilding firm of Denny Brothers.

A CORRESPONDENT in Paris writes that another trial of the steerable balloon *Le Jaune* was made on November 20. According to the readings of the Eiffel Tower, the wind was blowing S.S.W. with a mean velocity of 10 metres a second when *Le Jaune* left Champ de Mars at 11.25 a.m., and in a few seconds the balloon rose to a height of about 100 metres. At first the helm alone was used, and then one of the screws. The balloon soon took the direction of Chalais-Meudon, reaching its destination at 11.52 a.m.

IN moving the adoption of the report of the Government Department Committee appointed last year to inquire into the constitution, powers, and duties of the curiously named Board of Manufactures, at the recent annual meeting of the Royal Scottish Geographical Society, Sir John Murray urged the claims of science to more generous treatment. The recommendations of the committee include the reconstruction of the Board of Manufactures and the adoption of a variety of expedients to ensure better instruction in art and the improvement of the art galleries in Edinburgh. During the course of his remarks Sir John Murray said he would have liked a recommendation that certain of the buildings administered by the Board should be devoted to the purposes of science. Arrangements could, he said, be easily made for housing the Royal Geographical Society and other scientific societies, and they should all unite to secure the Edinburgh Royal Institution for science.

A DEPUTATION from the Institution of Electrical Engineers was received at Windsor on Friday last by the King of Italy and presented an address. The deputation consisted of Mr. Robert Kaye Gray, president, Lieut.-Colonel R. E. Crompton, Sir H. Mance, Dr. J. W. Swan, F.R.S., and Prof. Silvanus P. Thompson, F.R.S., accompanied by Mr. W. G. McMillan, secretary of the Institution. Telegrams were dispatched the same evening to the Associazione Elettrotecnica Italiana and to the Milan section of the Associazione, and the following replies were received from them :—"Most sensible to the feelings that inspired your kind telegram. I thank the Institution of Electrical Engineers for the new proof of sympathy, and return most hearty greetings in the name of the Associazione Elettrotecnica Italiana."—(Sd.) Ascoli. "Homage added by Institution of Electrical Engineers to enthusiastic reception to our King by all England was learned with grateful feelings by Milan Section Associazione Elettrotecnica Italiana as a new token of friendship binding Scientific bodies of the two Countries."—(Sd.) Bertini.

THE Berlin correspondent of the *Times* reports that at a meeting of the German Society of Naval Architecture held on November 20 in the technical college at Charlottenburg, a paper was read by Geheimrath Riedler on the revolutionary effect of the invention of the steam turbine upon the future of steam power. A great revolution in steam power was in progress, and the lecturer regretted that Germany lagged far behind in the adoption and development of the new motor. In a paper on the uses of the telephone for naval purposes, Herr D. Zopke, the Government constructor, gave an account of an adaptation of the so-called "stentor microphone" by means of which not only could commands be conveyed to all parts of a vessel, but the men working six guns could be directed simultaneously by a single officer. He discussed experiments made with the microphone with the object of making it give warning of the approach of hostile ships, and concluded by giving some details of the progress which had been made in Germany in the attempts to solve the problem of wireless telephony.

REFERRING to Mr. Douglas Archibald's letter on Bruckner's weather cycle, mentioned in last week's NATURE (p. 62), Dr. H. R. Mill remarks in the *Times* that the cycle does not fit the sequence of weather so satisfactorily in the British Isles as on the continents, but he urges that there must be some way to reconcile the differences, and that the subject should be taken up by some scientific society. In a letter in Tuesday's *Times* Mr. Archibald explains that according to Bruckner's studies this country happens to lie on an axis of a weather see-saw, so that east Britain alone conforms to the continental law. "Dr. Bruckner shows plainly from the past records of British stations how the law which is found to apply all over the Eurasian continent holds with somewhat diminished intensity over the eastern half of Britain, and then, after disappearing over the neutral territory of west Britain and east and middle Ireland, reappears in its opposite phase over north-west Ireland, in common with the Færöes and Iceland." In conclusion, Mr. Archibald gives the following comparison for Brussels and London to show that the Bruckner oscillation loses little in its passage across the Channel.

Total Excess or Defect of Rainfall in the Period.

	Brussels Inches	London Inches
1826-1840 [1]	− 7·20 ...	− 6·17
1841-1855	+ 7·16 ...	+ 4·35
1856-1870	−21·25 ...	−11·85
1871-1885	+33·34 ...	+19·65
1886-1902	−25·44 ...	−29·75

[1] For Brussels the period of observation embraces 1833-1901.

WE have received some numbers of the *Journal* of the Meteorological Society of Japan. They contain several valuable papers relating, *e.g.*, to observations in the Inland Sea and North Pacific, articles on the distribution of barometric pressure in Formosa, and reduction tables. At present the text is in Japanese, but it is stated it is intended to insert articles occasionally in English, French or German. This plan will render the *Journal* much more useful to European readers. The Society was founded in 1882, and counts at present more than 260 members.

THE International Aëronautical Committee (president, Dr. Hergesell) has discontinued the publication of the preliminary results of the monthly scientific balloon ascents in view of arrangements made for the speedier issue of the discussion of the definitive results. We have received, however, short summaries of the ascents undertaken by the various countries. In August Mr. Alexander's paper balloon, at Bath, attained a height of 13,000 metres. In September Mr. Dines's kite, at Crinan, N.B., reached an altitude of 2250 metres. The greatest height attained during the last three months was 20,000 metres in an unmanned balloon sent up from Strassburg.

IN the *Sitzungsberichte* der Physikalisch-medicinischen Societät in Erlangen, Herr Fritz Buchner describes an interesting method of measuring the gradual falling off in the intensity of the phosphorescence of bodies excited by kathode rays. This is effected by an arrangement of rotating films, the photographic impression produced by the phosphorescent body as measured by the polarisation photometer of Martens being taken as the measure of the intensity. The author expresses the opinion that the phosphorescent light is a direct consequence of the combination of the ions produced by the action of the kathode rays to form electrically neutral molecules.

A NEW anti-tuberculous serum is stated to have been prepared by Dr. Marmorek, of the Pasteur Institute, Paris. By the use of a special culture medium for the tubercle bacillus, a toxin has been obtained with which horses are inoculated, and after repeated doses their blood-serum acquires antitoxic properties. The serum may then be employed for treatment, and many cases are reported to have been benefited by the injections. Dr. Marmorek is well known for his work in connection with the preparation of an anti-streptococcic serum.

IN the October number of the *Journal of Hygiene* (vol. iii., No. 4) Drs. Hill and Macleod give an elaborate experimental study of caisson disease and diver's palsy, Dr. Newsholme reviews the action of English public health authorities in regard to tuberculosis, and Dr. Barclay discusses the New Zealand birth- and death-rate. The air of the House of Commons has been subjected to chemical examination by Mr. Butterfield, and to bacteriological examination by Dr. Graham Smith, from which it appears that the air breathed by our legislators is exceptionally pure. Dr. Cropper writes on the occurrence of malaria in places usually free from anopheles, and Dr. Nuttall contributes an obituary notice of the late Prof. Nocard, with portrait and list of his published papers.

IN a report to the Home Office, Dr. Haldane gives an account of ankylostomiasis in the Westphalian collieries. This disease, which is due to a parasitic intestinal worm, has, since its introduction in 1895, been spreading considerably, so that in 1902 there were more than thirteen hundred cases in sixty-nine collieries. Official regulations have been drafted in order to stamp out the disease, the chief provisions of which are:—(1) no new hands may be engaged unless proved to be free from infection; (2) in every colliery at least 20 per cent. of the men shall be picked out by a specially instructed doctor, and their dejecta examined microscopically on at least three occasions; (3) any man found to be infected is subjected to a course of treatment, and is not allowed to resume work until completely freed from the worms. In the event of the examination of 20 per cent of the men showing the mine to be infected, additional measures are taken:—(4) the whole of the men employed underground are examined, and if necessary treated; (5) every man treated is to be re-examined monthly for three months. In addition, regulations have been made for the better sanitation of the mines. The infected men are treated in hospital, and receive sickness allowance during treatment.

A BLUE-BOOK containing the official report of the preliminary conference on wireless telegraphy which was held in Berlin last August has just been published. The decisions arrived at were known some time ago, and in September last we summarised the main points in an article in these columns (NATURE, vol. lxviii. p. 437). There is little to add to what was then said; the final protocol which was drawn up was signed by the delegates from Germany, Austria, Spain, the United States, France, Hungary and Russia. The delegates of Great Britain and Italy agreed to submit the proposals to their Governments with certain reserves. In the case of Italy the agreements made between the Marconi Co. and the Government greatly limit the power of the Italian Government to adopt the proposals of the conference. In Great Britain the difficulty lies in the fact that the Postmaster-General has no power over telegraphic communications beyond the limits of the territorial waters, and special legislation would therefore be required. In most of the other countries the telegraphy monopoly covers the establishment of wireless telegraph stations. When the proposals of the present conference have been considered by the various Governments a further conference will be held to establish an International Conference.

THE third part of Sir C. Le Neve Foster's general report and statistics relating to the output and value of the minerals raised in the United Kingdom, the amount and value of the metals produced, and the exports and imports of minerals, has now been published. This volume deals especially with the output during 1902. The total output of coal was 227,095,042 tons, which is the largest on record; compared with the output of 1901, there is a rise of 8,048,097 tons. We consumed 166,694,908 tons in the United Kingdom, or nearly 4 tons per head of the population. 17,649,137 tons of coal were used in blast furnaces for making pig-iron. The quantity of coal exported, exclusive of coke, patent fuel, and coal shipped for use of steamers engaged in foreign trade, was 43,159,046 tons, an increase of 1,281,965 tons compared with the preceding year. If the quantities shipped for use of steamers engaged in foreign trade are added, the total amount of coal which left our shores was 60,400,134 tons, or about as much as the entire output of the kingdom half a century ago.

IN a recent note (October 15, p. 578) on articles in the October number of the *Century Magazine*, the name of the yellow-fever mosquito was inadvertently given as *Culex aeniatus* instead of *Stegomyia fasciata*.

THE *Transactions* of the Hull Scientific and Field Naturalists' Club for 1903 contain the article on the birds of Bempton Cliffs of which a special notice has already appeared in our columns. In a note on the dispersal of fresh-water shells by beetles, the Rev. E. P. Blackburn records the capture of several water insects with pisidia clinging to their limbs.

THE report of the Albany Museum for 1902 records satisfactory progress on the part of that institution. Special interest attaches to the announcement of the discovery of a small lizard's skull from the Karoo formation, which it is proposed to call *Paliguana whitei*. This is believed to be

the only true lizard from strata of pre-Jurassic age. The specimen is to be described in the first number of a new journal, *Records* of the Albany Museum.

THE National Museum of Dublin was enriched last year by the gift of a very extensive herbarium of Irish plants, collected by the late Mr. Levinge, of Co. Westmeath. In the *Scientific Proceedings* of the Royal Dublin Society Dr. Johnstone and Miss Knowles have published a list of plants, for which the localities furnish new records, whether for the county or for other parts of Ireland.

IN the *Journal of Botany* (November) Dr. Rendle gives a description of the grass *Glyceria festucaeformis*, new to Britain, which was discovered by Mr. Praeger on the north-east coast of Ireland. This is an unexpected locality for a grass which is regarded as a Mediterranean type. In the same journal there appear two lists of mosses and hepatics, the one for Worcestershire recorded by Mr. Bagnall, the other contributed by Canon Lett of collections made in South Donegal.

IN a *Bulletin* issued by the U.S. Department of Agriculture which deals with the diminished flow of the Rock River, Mr. F. G. Schwarz discusses the question how far the water supply of a river is affected by drainage and deforestation. He contends that the actual diminution in amount is unimportant as compared with the resulting fluctuations in the flow of water, especially where the melting snow provides an appreciable source of the supply. As a remedy it is suggested that, in addition to increasing the area of forest, it would probably pay, where the land is valuable, to construct artificial reservoirs for regulating the supply of water.

THE complex series of movements which are carried out by the flowers of *Sparmannia africana*, a well-known greenhouse shrub, from the opening of the buds to the setting of the fruit has been carefully studied by Mrs. D. H. Scott, and is described in the *Annals of Botany*. In the latter part of the paper the writer gives an account of experiments which were carried out in order to show these movements by means of a kinematograph, and in which success was ultimately attained by the use of an instrument called after the maker the Kammatograph. In the Kammatograph, by means of eccentric rotation, exposures are made of successive portions of a film coated on a glass disc, so that a series of spirally arranged negatives is obtained.

THE latest Rationalist Press Association reprints, published by Messrs. Watts and Co., are John Stuart Mill's "On Liberty" and "Haeckel's Critics Answered," by Mr. Joseph McCabe. Both are published at sixpence.

MESSRS. MACMILLAN AND CO., LTD., have published in their sixpenny series "Essays Ethical and Political," by the late Prof. Huxley. The Romanes lecture delivered in 1893 on "Evolution and Ethics" is included, together with the Prolegomena written in the following year.

A NEW edition of Mr. G. Hale Puckle's "Elementary Treatise on Conic Sections and Algebraic Geometry" has been published by Messrs. Macmillan and Co., Ltd., at 7*s*. 6*d*. Alterations in the treatment of the general equation of the second degree have been made, and more simple methods of reduction and of finding the foci, eccentricities and axes are given.

WE have received the fifth half-volume of the "Natural History of Animals," by Prof. J. R. Ainsworth Davis, now being published by the Gresham Publishing Company. Previous volumes of the work have already been reviewed in these columns; the present part deals fully with animal movement in eleven chapters, running to 280 pages, and is illustrated by nearly 250 figures and three coloured plates.

THE second volume of Prof. H. Pellat's "Cours d'Électricité" has been published by M. Gauthier-Villars, of Paris, at 18 francs. The publication of the first volume, which deals with electrostatics, Ohm's law, and thermo-electricity, was announced in these columns in 1901. The present volume is concerned with electrodynamics, magnetism, the phenomena of induction, electromotors, electric oscillations, electromagnetic measurements, and similar subjects. A third volume, yet to be published, will complete the course, and will discuss electrolysis, electrocapillarity, and associated subjects.

THE additions to the Zoological Society's Gardens during the past week include a Campbell's Monkey (*Cercopithecus campbelli*) from West Africa, presented by Mr. J. F. Purser; a Macaque Monkey (*Macacus cynomolgus*, var.) from India, two African Brush-tailed Porcupines (*Atherura africana*) from West Africa, a Rose-Hill Parrakeet (*Platycercus eximius*) from Australia, deposited.

OUR ASTRONOMICAL COLUMN.

SOLAR PHENOMENA AND MAGNETIC STORMS.—In a communication presented to the Paris Academy of Sciences, M. Quenisset directs attention to the fact that, whilst the passage of a large group of sun-spots across the sun's central meridian on October 31 coincided with a terrestrial magnetic storm of exceptional activity, the passage of a much larger group on October 11 was marked by a very faint perturbation of the magnets. In explanation of this apparent anomaly he points out that the smaller group of spots was surrounded by an immense tract of faculæ, so bright that it was found possible to photograph them by the ordinary method, even when they were on the sun's central meridian, whilst scarcely any faculæ attended the larger and earlier group. From this fact M. Quenisset arrives at the conclusion, which is now becoming generally accepted, that it is the prominences and faculæ on the solar surface rather than the spots which are so closely related to terrestrial phenomena, and suggests that the monochromatic photographs of the solar surface obtained by the Hale-Deslandres method, such as are now being taken at Yerkes, South Kensington, and Meudon, will provide valuable data for the discussion of the inter-relation of solar and terrestrial phenomena (*Comptes rendus*, November 9).

OBSERVATIONS OF JUPITER.—In the November number of the *Bulletin* de la Société astronomique de France, M. Ch. Lukacs, of Budapest, publishes the results of his observations of Jovian phenomena during 1902; the following are the principal conclusions derived from the observations:—(1) The Red Spot has totally disappeared except at its eastern extremity; (2) the southern equatorial band shows remarkable activity in its northern parts; (3) the equatorial band, formerly the scene of the greatest activity of Jupiter's atmospheric forces, has now become absolutely uniform; (4) the northern equatorial band is growing gradually fainter from the south towards the north; (5) the south temperate band presents a curious depression just above the eastern extremity of the Great Red Spot, and, on August 6, two very sharply defined deviations in the course of this band were observed, the one at 125°, the other at 175° of Jovian longitude; these deviations were similar to those observed by the late Prof. Keeler on August 28, 1900; (6) the colour of the equatorial bands was a brownish ochre; the zones, generally, appeared to be of a whitish yellow, with the exception of the tropical zones, which were white, and the polar zones, which had a grey tinge mixed with yellow.

In his communication M. Lukacs gives the details of his individual observations and twelve excellent drawings of the planet as it appeared on various occasions during 1902.